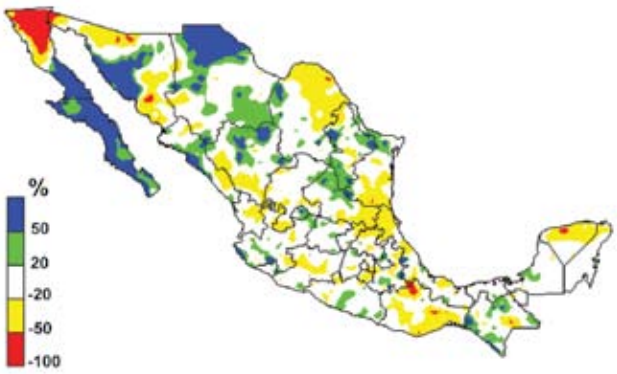

Fig. 6.15. Precipitation anomalies (%) during the May–October 2006 rainy season in Mexico.

and Tamaulipas (12% below), Quintana Roo (10% below), and Sinaloa (7% below). The deficits in the northwest were associated with a poor winter rainy season in early 2006 and again in late 2006. The development of El Niño conditions during the later half of the year was associated with four east Pacific tropical storms that recurved toward the west coast of Mexico: John, Lane, Norman, and Paul. In contrast, there were no landfalling tropical storms on the east coast of Mexico; this helped to contribute to the observed dryness in the Yucatan Peninsula and northeast Mexico.

Despite the very warm annual mean temperature; a notable cold outbreak occurred in northern Mexico on 17 January when Temosachic and La Rosilla recorded –15°C, Yecora recorded –10°C, Pabillon recorded –7°C, and Saltillo recorded –4.5°C. An exceptionally early winter cold outbreak occurred in the northwest on 1 December, with La Rosilla falling to –13.5°C and Temosachic to –12°C. One of the most significant and highly unusual meteorological events occurred during the last week of the year in the states of Chihuahua and Durango when very heavy snows covered the western section of the these two states, with mountainous areas exceeding well over 10 in. of snow.

d. Central America and the Caribbean—P. Ramírez and J. Peréz Fernández

1) Precipitation

Most of the Central American isthmus and the Caribbean experienced drier-than-normal conditions in 2006 (Fig. 6.16). Precipitation deficits were severe and more persistent over what is known as the "dry corridor" of Central America (western Guatemala, central Honduras, northern and central Nicaragua, and western El Salvador). August had the highest precipitation deficits compared to the 1971–2000 period. Precipitation deficits continued during September and October along the dry corridor. In parts of Nicaragua and Honduras, deficits between 35% and 55% of the long-term mean were observed in September and October. October is when most tropical cyclones form close to Central America, generating very intense rains or "temporales" on the Pacific side of the isthmus. The temporales were lacking in autumn 2006, because El Niño conditions were observed in the tropical Pacific. In November, the Caribbean side of Central America was affected by a cold front that brought strong rains to the northern Honduras coast and central Panama. Late-year rains, associated with the divergent phase of the MJO, were observed on the Pacific side of Central America through the middle of December.

2) Temperature

Annual mean surface temperature in 2006 was above normal across much of Central America and parts of the Caribbean (Fig. 6.17). Positive anomalies of between 0.3° and 0.4°C were found over Central America (south and west of Honduras and El Salvador, Nicaragua, and northern Costa Rica), and were near normal across Panama. Temperatures that were near normal predominated the first two months of the year. In March, resulting from a late intrusion of cold fronts into the region, below-normal monthly means were observed in Belize, western Guatemala and Honduras, and western Panama. At the same time, positive anomalies were registered in Costa Rica and Nicaragua. Positive anomalies dominated along

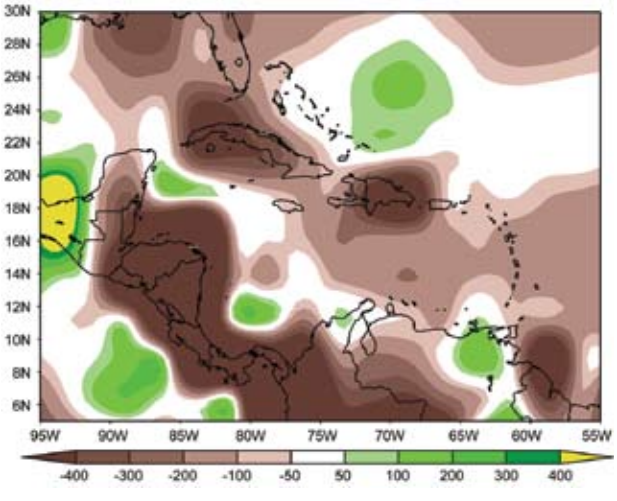

Fig. 6.16. Central American and Caribbean 2006 annual precipitation anomalies (mm, 1979–2000 base) from CAMS-OPI.

the whole region from May to October. The warmest conditions, relative to climatology, were observed in July and August, when monthly departures from the 1971–2000 mean exceeded 0.5°C. In November, mean temperatures in northern Central America (northern Guatemala and Belize) showed negative anomalies. In the southern extreme of the Central American isthmus (eastern Panama), temperatures remained above normal. The whole region showed positive anomalies once again in December.

3) Notable events

In 2006, the reduced hurricane activity in the Caribbean (consistent with the development of a weak El Niño event) spared Central America from heavy rainy events, creating a stark contrast between 2006 and 2005, when tropical cyclones had a significant impact on the region. Also consistent with El Niño, Central America experienced drier-than-normal conditions in the latter half of 2006. Cold surges in November impacted the region with low temperatures in the north and stronger-than-normal winds and rainfall in southern Costa Rica and Panama. The surges caused significant damage to vegetable crops in the Guatemala Plateau. Along with high humidity values, heavy flooding events produced floods in the Caribbean plains of Honduras and central Panama, where more than 450 mm of rain fell in some parts between 20 and 28 November.

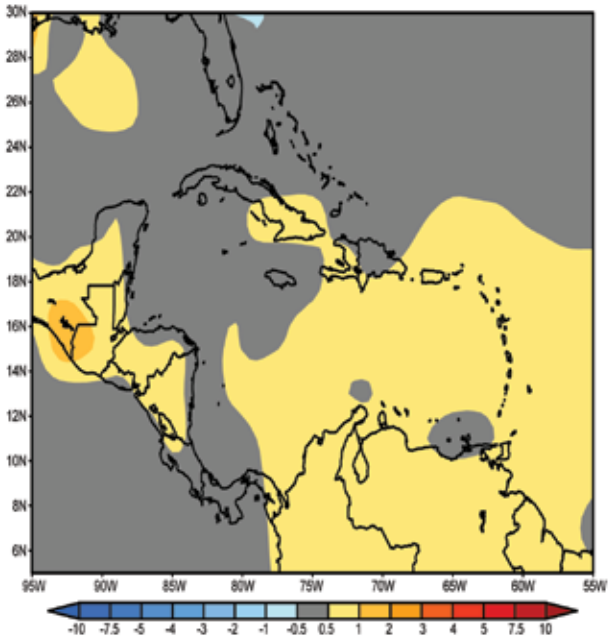

Fig. 6.17. Central American and Caribbean 2006 annual temperature anomalies (°C, 1971–2000 base) from CAMS-OPI.

COUNTRY SPOTLIGHT: CUBA—R. Peréz Suárez, C. Fonseca Rivera, B. Lapinel Pedroso, V. Cutié Cansino, A. M. Carrión Romero, M. Hernández Souza, and D. Boudet Roco

The Cuban climate in 2006 was affected by the weak El Niño, primarily from September through December. Precipitation was lower than normal in September and October. In November and December, precipitation was above normal as cold fronts reached the Caribbean, and the subtropical jet was southeast of its usual position (consistent with El Niño). December was a particularly warm month across Cuba.

The year 2006 as a whole was very warm (11th warmest since 1951), with an average temperature of 25.85°C, 0.36°C above normal (Fig. 6.18). January and December contributed most to the warm anomaly. January, the coldest month, brought positive anomalies of 0.5°–1°C across Cuba, whereas December was the second warmest since 1951 (just behind 1986). Many Cuban stations broke maximum or minimum temperature records in 2006, especially during a cold outbreak in late November.

Rainfall deficits affected parts of western and central Cuba. Eastern parts received abundant rainfall, including Holguín y Guantánamo (comparing against the 1971–90 normal). Tropical cyclones Alberto and Ernesto both impacted Cuba. In June, Alberto brought intense rains to western Cuba, especially in Pinar del Río and Isla de la Juventud.In August, Ernesto brought torrential rains to central and eastern Cuba. Despite these two storms, the 2006 hurricane season was relatively quiet for Cuba, considering the activity witnessed this decade.

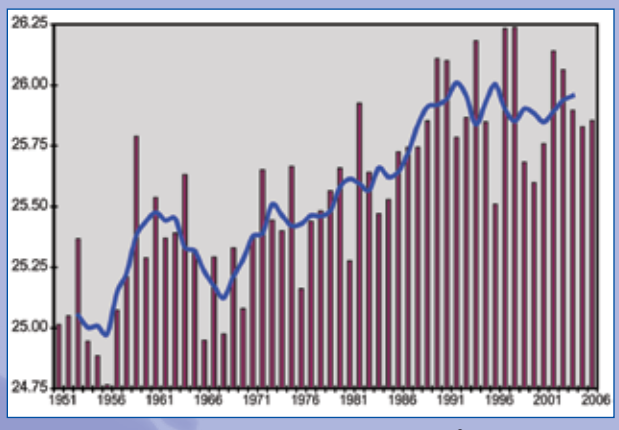

Fig. 6.18. Annual average temperatures (°C) over Cuba from 1951 to 2006.